Claims

1. A silica glass jig for semiconductor industry, characterized by having on the surface of the above-described jig, pyramidal projected structures with their cut-off apices and concave portions therebetween, and small projections are uniformly distributed thereon.

2. A silica glass jig for semiconductor industry described in Claim 1, characterized in that, on the surface thereof, the concave portions are dimpled and each having a width of from 20 to 300 μm, and there are grooves each having a width of from 0.5 to 50 μm at an interval of from 20 to 300 μm, and between the grooves and in the grooves, small projections each having a width of from 1 to 50 μm and a height of from 0.1 to 10 μm are uniformly distributed.

3. A silica glass jig for semiconductor industry described in Claim 1 or 2, wherein the maximum width of the bottom portions of the pyramidal projected structures with their cut-off apices is from 70 to 1000 μm and a height from the bottom portions to the top portions of the projected structures is from 10 to 100 μm, and the maximum width of the bottom portions of the small projections uniformly distributed on the protruded structures is from 1 to 50 μm and the height thereof from the bottom portions to the top portions is from 0.1 to 10 μm.

4. A silica glass jig for semiconductor industry described in one of the preceeeding Claim 1 to 3, wherein the average roughness Ra of the silica glass jig for semiconductor industry is in a range of from 1 to 10 μm.

5. A method for producing a silica glass jig for semiconductor industry, characterized by machining the surface of the silica glass jig to form irregularities, and then treating the resulting surface with a treating solution containing hydrogen fluoride and ammonium fluoride.

6. A method for producing a silica glass jig for semiconductor industry described in Claim 5, wherein the treating solution further contains an organic carboxylic acid.

7. A method for producing a silica glass jig for semiconductor industry described in Claims 6, wherein the organic carboxylic acid is acetic acid

8.. A method for producing a silica glass jig for semiconductor industry described in Claim 5, wherein the machining is a sandblasting treatment.

9. A method for producing a silica glass jig for semiconductor industry described in preceeding Claims 5 to 7, wherein the treating solution contains from 10 to 30 % by mass of hydrogen fluoride, from 5 to 30 % by mass of ammonium fluoride, from 45 to 70 % by mass of an organic carboxylic acid, and rest being water.

10. A method for producing a silica glass jig for semiconductor industry by immersing the silica glass jig in a first processing solution containing hydrogen fluoride, ammonium fluoride, and an organic acid, and then immersing it at least once in a second processing solution, wherein the content of the organic acid is higher than that of the first processing solution.

11. A method for producing a silica glass jig for semiconductor industry, described in Claim 10, wherein the first processing solution is an aqueous solution containing from 15 to 50 % by mass of hydrogen fluoride, from 6 to 30 % by mass of ammonium fluoride, and from 30 to 50 % by mass of an organic acid, and the second processing solution is a processing solution containing from 5 to 20 % by mass of hydrogen fluoride, from 6 to 30 % by mass of ammonium fluoride, and from 40 to 70 % by mass of the organic acid.

12. A method for producing a silica glass jig for semiconductor industry described in Claim 11, wherein the organic acid is acetic acid